

REMARKS

Please reconsider this application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

Disposition of Claims

Claims 60-69 are currently pending in this application. Claim 60 is independent. The remaining claims depend, directly or indirectly, from claim 60.

Amendments to the Claims

Claim 60 has been amended to replace “without aiming toward said first opening,” which the Examiner rejected as being indefinite, with “said first opening facing away from said second electrode body.” Support for the amendment can be found, for example, in Figs 15, 19, 28, 29, 30, and 32. Claim 61 has been amended to correct a grammatical error. The amendments are not made in view of prior art, and no new matter has been added by way of the amendments.

Rejection(s) under 35 U.S.C. § 112

Claims 60-69 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. Specifically, the Examiner asserts that the term “without aiming toward said first opening” in claim 60 is a relative term which renders the claim indefinite. The claim has been amended to cancel the above term and recite “said first opening facing away from said second electrode body.” One of ordinary skill in the art would understand that the above limitation requires

that the second electrode body must not be disposed in the direction in which the first opening opens. Accordingly, withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 60-66, and 69 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0129107 ("Denes") in view of U.S. Patent No. 5,500,256 ("Watabe"). This rejection is respectfully traversed.

Claim 60 requires, in part, "an elongate metallic first electrode body extending in a longitudinal direction orthogonal to said passage direction," "an elongate metallic second electrode body extending in said longitudinal direction and arranged in parallel with said first electrode body in an arranging direction orthogonal to said longitudinal direction and to said passage direction," and "an elongate dielectric first case body extending in said longitudinal direction in parallel with said first and second electrode bodies."

The plasma surface processing apparatus of claim 60, as shown, for example, in Figs. 15 and 19, has a gas passage 20c through which gas passes in a passage direction (horizontal direction in Fig. 15), an elongate metallic first electrode body 51 extending in a longitudinal direction (into the page in Fig. 15) orthogonal to the passage direction, an elongate metallic second electrode body 52A extending in the longitudinal direction in parallel with the first electrode body 51 in an arranging direction (vertical direction in Fig. 15) orthogonal to the longitudinal direction and to the passage direction, and an elongate dielectric first case body 57a extending in the longitudinal direction. That is, the first electrode body 51, the second electrode body 52A, and the dielectric first case body 57a must be elongate and extend in a longitudinal direction that is

orthogonal to both a passage direction and an arranging direction, wherein the passage direction is the direction in which gas passes through the gas passage 20b, and wherein the arranging direction is the direction in which the first electrode body 51 and second electrode body 52A are arranged in parallel.

Denes discloses a plasma source 400 having a first electrode 402 extending from a first electrode bed 404 and a second electrode member 406 having a gas passage 408 defined therein between an inlet surface 410 and an outlet surface 412, and the gas passage walls defining a second electrode 414 . An insulating layer 416 is provided on the walls of the gas passage 408.

The Examiner asserts that the first electrode 402 of Denes reads on the elongate metallic second electrode body extending in a longitudinal direction. In the telephone interview of July 22, 2008, the Examiner explained that the horizontal direction of Figs. 3 and 4 are considered the longitudinal direction of claim 60. However, Fig. 4 clearly shows that first electrode member 402 is elongate in the vertical direction, not the horizontal direction. In fact, the horizontal width of the first electrode 402, which is the diameter of the cylindrical first electrode 402, is the smallest dimension thereof. Thus, in Fig. 4, the vertical direction must necessarily be considered equivalent to the longitudinal direction of claim 60.

The Examiner further asserts that the second electrode member 406 of Denes reads on the elongate metallic first electrode body extending in the longitudinal direction, and that the insulating layer 416 reads on the dielectric first case body extending in the longitudinal direction, of claim 60. However, as shown in Figs. 1 and 4, the second electrode member 406 is not elongate in the longitudinal direction (vertical direction of Fig. 4). In fact, the second electrode member 406 of

Denes has its smallest dimension in this longitudinal direction. Thus, because claim 60 requires that the first electrode body, the second electrode body, and the dielectric first case body must be elongate and extend in the same direction, Denes fails to show or suggest at least the above limitations of claim 60.

Watabe, which discloses a vapor phase process for processing semiconductor wafer surface by supplying a process gas to the surface, clearly fails to supply that which Denes lacks regarding the above limitations. That is, Watabe fails to show or suggest at least the elongate first electrode body, the elongate second electrode body, and the elongate dielectric first case body extending in a longitudinal direction.

Claim 60 further requires, in part, "said first case body being formed a cross section orthogonal to said longitudinal direction into a U-shape so that said first case body has a first opening which is opened toward one side direction orthogonal to said longitudinal direction."

The plasma surface processing apparatus of claim 60, as shown, for example, in Figs. 15 and 19, has a first case body 57a that is U-shape in a cross-section (the cross section shown in Fig. 15) orthogonal to the longitudinal direction, so that the first case body 57a has a first opening open toward a direction (horizontal direction in Fig. 15) orthogonal to the longitudinal direction.

Although the Examiner asserts in the Office Action that the insulating layer 416 of Denes is U-shaped, in the telephone interview of July 22, 2008, the Examiner agreed that the insulating layer 416 is pipe-shaped, and not U-shaped, as required by the claims. The Examiner agreed to reconsider the limitation in view of our telephone interview. Applicant notes there is no element in Denes that is U-shaped in a cross-section orthogonal to the longitudinal direction.

Watabe clearly fails to supply that which Denes lacks regarding the above limitations. That is, Watabe fails to show or suggest at least a first case body that is U-shape in a cross-section orthogonal to the longitudinal direction, so that the first case body has a first opening open toward a direction orthogonal to the longitudinal direction.

Claim 60 further requires, in part, "an elongate metallic first electrode body extending in a longitudinal direction orthogonal to said passage direction and having an elongate outer first surface extending in said longitudinal direction," "said first electrode body being received in said dielectric first case body so that said first surface is contacted with an inner peripheral surface of said first case body," and "said second electrode body being disposed outside of said dielectric first case body in said arranging direction."

As explained above, the Examiner asserts that the second electrode member 406 of Denes reads on the first electrode body of claim 60, the first electrode 402 of Denes reads on the elongate metallic second electrode body of claim 60, and that the insulating layer 416 reads on the dielectric first case body of claim 60. However, as shown in Fig. 4 of Denes, the only surface of second electrode member 406 in contact with the insulating layer 416 is the inner surface, and not the outer surface, of the first electrode body. Thus, Denes fails to show or suggest at least "said first electrode body being received in said dielectric first case body so that said first surface is contacted with an inner peripheral surface of said first case body," as required by the claims.

Watabe clearly fails to supply that which Denes lacks regarding the above limitations. That is, Watabe fails to show or suggest at least an elongate metallic first electrode body extending in a longitudinal direction orthogonal to said passage direction and having an elongate outer first

surface extending in said longitudinal direction, said first electrode body being received in said dielectric first case body so that said first surface is contacted with an inner peripheral surface of said first case body, and said second electrode body being disposed outside of said dielectric first case body in said arranging direction, as required by the claims.

Furthermore, a *prima facie* case of obviousness requires that all claim limitations be taught or suggested by the prior art. See *In re Royka*, 490 F.2d 981 (CCPA 1974); MPEP §§ 706.02(j), 2143.03. If even a single claim limitation is not taught or suggested by the prior art, then that claim cannot be obvious over the prior art. *Id.*

In lines 16-19 on page 6 of the Office Action, the Examiner admits that Denes fails to teach the limitation “an end part on a side of said first opening of said first case body being protruded in said one side direction relative to said first electrode body” of claim 60. The Office Action is silent regarding how Watabe supplies this limitation which Denes lacks. Thus, a *prima facie* case of obviousness has not been established for claim 60.

In view of the above, claim 60 is patentable over Denes and Watabe, whether considered separately or in combination, at least for the above reasons. Claims 61-66, and 69 depend, either directly or indirectly, from claim 60. Thus, claims 61-66, and 69 are patentable over Denes and Watabe, at least for the same reasons as claim 60. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 67 and 68 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Denes and Watabe in view of U.S. Patent No. 6,137,231 (“Anders”). This rejection is respectfully traversed.

As explained above, claim 60 is patentable over Denes and Watabe. Further, Anders fails to supply that which Denes and Watabe lack, as evidenced by the fact that Anders is only relied upon to disclose a plasma source array having a plate/electrode varying along a direction of gas flow.

In view of the above, claim 60 is patentable over Denes, Watabe, and Anders, whether considered separately or in combination, at least for the above reasons. Claims 67 and 68 depend indirectly from claim 60. Thus, claims 67 and 68 are patentable over Denes, Watabe, and Anders, at least for the same reasons as claim 60. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply to be responsive to all outstanding issues and place the application in condition for allowance. If this belief is incorrect, or any other issues arise, do not hesitate to contact the undersigned or his associates at the telephone number listed below. Favorable action in the form of a Notice of Allowance is respectfully requested. Please apply any charges not covered, or any credits, to Deposit Account No. 50-0591, under Order No. 12088/019001 from which the undersigned is authorized to draw.

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Respectfully submitted,

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